

**TECHNICAL PAPER A-1**  
**DEVELOPMENT OF PROJECTED FIRM DEMANDS FOR MUNICIPAL**  
**AND OTHER FIRM USES (EXCLUDING POWER PLANTS)**  
**January 2026<sup>1</sup>**

## **INTRODUCTION**

For this revision to the LCRA Water Management Plan (WMP), future firm demand assumptions were updated. This technical paper addresses the demand assumptions for municipal and other firm uses of LCRA customers, excluding steam electric power plants. For brevity, the term “Muni-Other” is used throughout this document to refer to these firm non-steam electric demands. Demands for steam electric power plants are addressed in Technical Paper A-2. The demands for entities that are not customers of LCRA, such as the City of Corpus Christi, were set to the full authorized annual diversion of their water right and are not discussed further in this technical paper.

The Muni-Other demands used for this WMP update are projected for year 2032. The demands were developed for two conditions: a high-use water demand for hot and dry years and a normal-use water demand for all other years.

The development of the Muni-Other annual demand volumes for a high-use year and a normal-use year are detailed in **Section 1.0**. Projections developed for LCRA’s long range planning effort, the Water Supply Resource Report<sup>1</sup>, were used for the majority of the Muni-Other demand volumes, and this methodology is described below in **Section 1.1: Group A Demands**. After receiving feedback in early 2025 from LCRA customers on the preliminary 2032 demand projections, some customer demands were modified to incorporate more recent use and population growth information as described below in **Section 1.2: Group B Demands**.

The 84-year period of record was differentiated into high-use years and normal-use years using historic precipitation and temperature data, and this approach is described in **Section 2.0**.

Factors based on the ratio of Muni-Other high-use year and normal-use year demands were developed to simulate demands during high-use years versus normal-use years in the WAM model. More information on the calculation of these factors is provided in **Section 3.0**.

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<sup>1</sup> The LCRA 2025 Water Resources Report can be found at [l cra.org/download/water-supply-resource-report/?wpdmdl=40116](https://l cra.org/download/water-supply-resource-report/?wpdmdl=40116)

## **1.0 DEVELOPMENT OF FIRM (MUNI-OTHER) DEMAND VOLUMES**

### **1.1 Group A Demands**

Group A LCRA firm customer demands were calculated based on information gathered in LCRA's WSRR. Group A customers include the City of Austin and all other non-steam electric LCRA firm customers not specifically named in Group B.

#### **1.1.1 Group A Municipal Demands**

Group A municipal customer demands were generally<sup>2</sup> projected based on historical per capita water use and population projection information.

High-water-use year per capita demands were calculated as the average of the three highest years of per capita water use from 2010-2020. The City of Austin demand calculation was an exception and excluded year 2011 due to the outlier nature of that year and the subsequent adoption of conservation measures that would preclude a repeat of the residential outdoor use experienced in that year. Normal-use-year baseline per capita demands were generally<sup>3</sup> calculated as the median of per capita demand from 2012-2020. Expected future plumbing savings estimates consistent with the Texas Water Development Board's (TWDB) 2021 Region K Water Plan were applied to applicable customer per capita water use. This represents future water efficiency savings from installation of more efficient plumbing fixtures and appliances required by state and federal codes.

Year 2032 population projections for municipal customers in group A were developed using information developed in support of the WSRR with the input of customer surveys and customer meetings. A variety of methods were ultimately used to develop decadal population projections for each municipal customer. Common data sources were customer generated projections, 2022 State Water Plan populations from TWDB, 2021 Region K projections, or using the full buildout population of the municipality. Year 2032 population projections used for Group A municipal demands were interpolated based on the WSRR projections for the years 2030 and 2040.

An additional municipal demand of 2,900 acre-feet per year for city of Austin municipal use is also included but is met exclusively with water reuse. This is a historic demand for reclaimed water not accounted for in the City's per capita use numbers.

#### **1.1.2 Group A Industrial Demands**

Group A industrial (non-steam electric) and other non-municipal demands were also developed based on estimates of these customers' demands conducted for the WSRR. LCRA has several current firm water customers that serve non-municipal demands, including industrial, agricultural, irrigation, power generation, and recreational uses. Changes in non-municipal water demands are typically driven by changes at individual facilities (e.g., facility expansions or reductions/retirement, changes in technology, conversion to other sources, etc.), rather than population growth. For most of the other non-municipal firm water

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<sup>2</sup> LCRA developed projections for LCRA municipal customers for the years 2030 and 2040 and used various sources when historic per capita water use was not available.

<sup>3</sup> Many of LCRA's smaller customers did not have the available data to calculate median per capita use. To develop a median per capita estimate for these customers, a factor was developed from the available data.

customers, the average of the three highest historical use values reported from 2010 to 2020 was applied to represent their high-use year demand projections. If no historical water use data was available, the current MAQ was used as the projected demand for 2032. Demands were revised based on customer input where applicable. No additional reductions due to plumbing savings, water conservation, or water efficiency were used for any of the non-municipal firm water customer demand projections.

## 1.2 Group B Demands

Group B demands were revised based on feedback received from some customers in early 2025. These customers are listed as follows: City of Pflugerville, Brazos River Authority, Travis County WCID # 17, City of Lago Vista, City of Marble Falls, and Travis County WCID 10. The estimates were either provided by the customer or were based on a customer identified growth rate and recent water use such as year 2023.

## 1.3 Projected Demand Comparison to Recent Demands

Demands by customer are provided in Table 1 below for comparison purposes. Total high-use projected demands for 2032 represent a 38% and a 46% increase over 2022 and 2023 demands respectively. Normal-use projected demands for 2032 represent a 21% and a 29% increase over 2022 and 2023 respectively.

**Table 1. 2032 Projected Demands Versus Recent Demands**

### LCRA Projected Firm Demands and Recent LCRA Firm Customer Use

Customer name	High Projected Use 2032	Normal Projected Use 2032	2022 Actual Water Use	2023 Actual Water Use
	a-f	a-f	a-f	a-f
1 City of Austin Municipal <sup>a,b,c</sup>	207,051	183,241	175,431	174,060
2 City of Leander	18,665	15,625	11,932	12,349
3 City of Cedar Park	19,479	18,619	16,304	16,517
4 City of Pflugerville	14,939	13,019	8,897	7,110
5 HIF	11,264	11,264	0	0
6 Travis County WCID 17	10,800	9,558	9,326	8,945
7 OQ Chemicals Corp	10,600	8,872	7,054	4,917
8 West Travis County PUA	9,808	9,376	8,548	6,644
9 Underground Services Markham, LP	9,300	7,784	7,156	5,362
10 Brazos River Authority	8,800	7,788	3,214	4,844
11 Domestic Use, Landscape Irrigation and Temporary Use	6,000	5,022	4,395	4,791
12 City of Dripping Springs <sup>d</sup>	3,914	3,276		
13 City of Marble Falls	3,301	2,921	1,827	1,799
14 Travis County MUD 4	3,958	3,321	3,236	3,255
15 Lakeway MUD	2,822	2,405	2,718	2,389
16 Travis County WCID 10 <sup>a</sup>	2,616	2,315		
17 City of Horseshoe Bay	2,586	2,033	2,620	2,315
18 Wells Branch MUD <sup>a</sup>	2,558	2,144		
19 City of Lago Vista	2,496	2,209	1,708	1,600
20 Firm Other <sup>a, e</sup>	38,701	31,454	18,492	9,087
<b>Total</b>	<b>389,658</b>	<b>342,246</b>	<b>282,858</b>	<b>265,984</b>
<b>Total Non-Austin MUN &amp; IND Only Total</b>	<b>182,607</b>	<b>159,005</b>	<b>107,427</b>	<b>91,924</b>

a. Some City of Austin wholesale demands are expected to transition to raw water contracts with LCRA. These demands are reflected in Wells Branch MUD, Travis County WCID 10, and Firm Other for 2032.

b. Natural lake evaporation from STP, LCRA and Austin reservoirs is modeled as an additional demand, except for Lake Fayette where natural evaporation is included in the reported demand.

c. There are additional 2032 demands for City of Austin Municipal (2,900 a-f/year) and Sand Hill Energy Center (1,250 a-f/year) that are met by direct reuse.

d. City of Dripping Springs was included in "Firm Other" for 2022 and 2023 Actual Water Use.

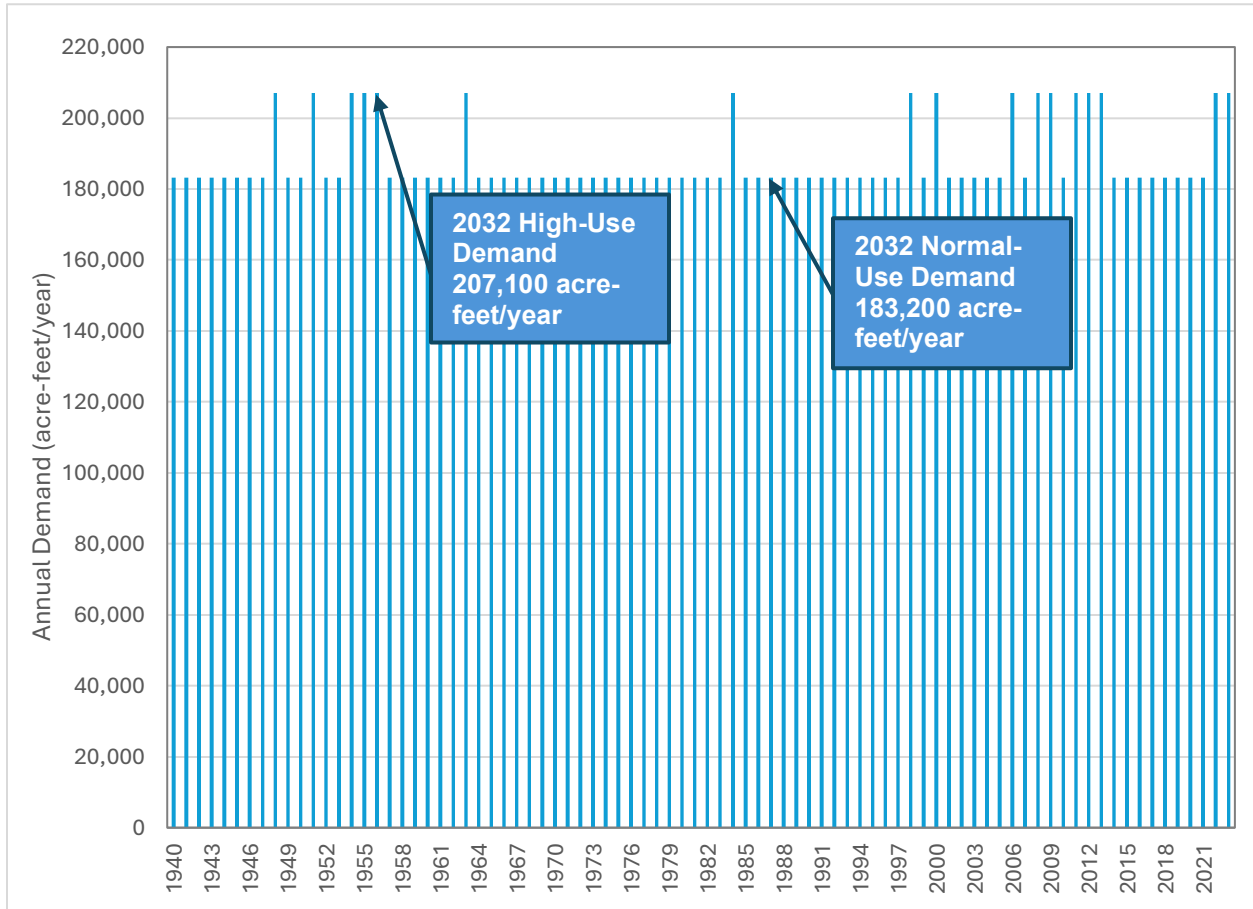
e. Customers with demands less than 2,300 a-f/year are included in Firm Other.

## 2.0 IDENTIFICATION OF HIGH-USE AND NORMAL-USE DEMAND YEARS

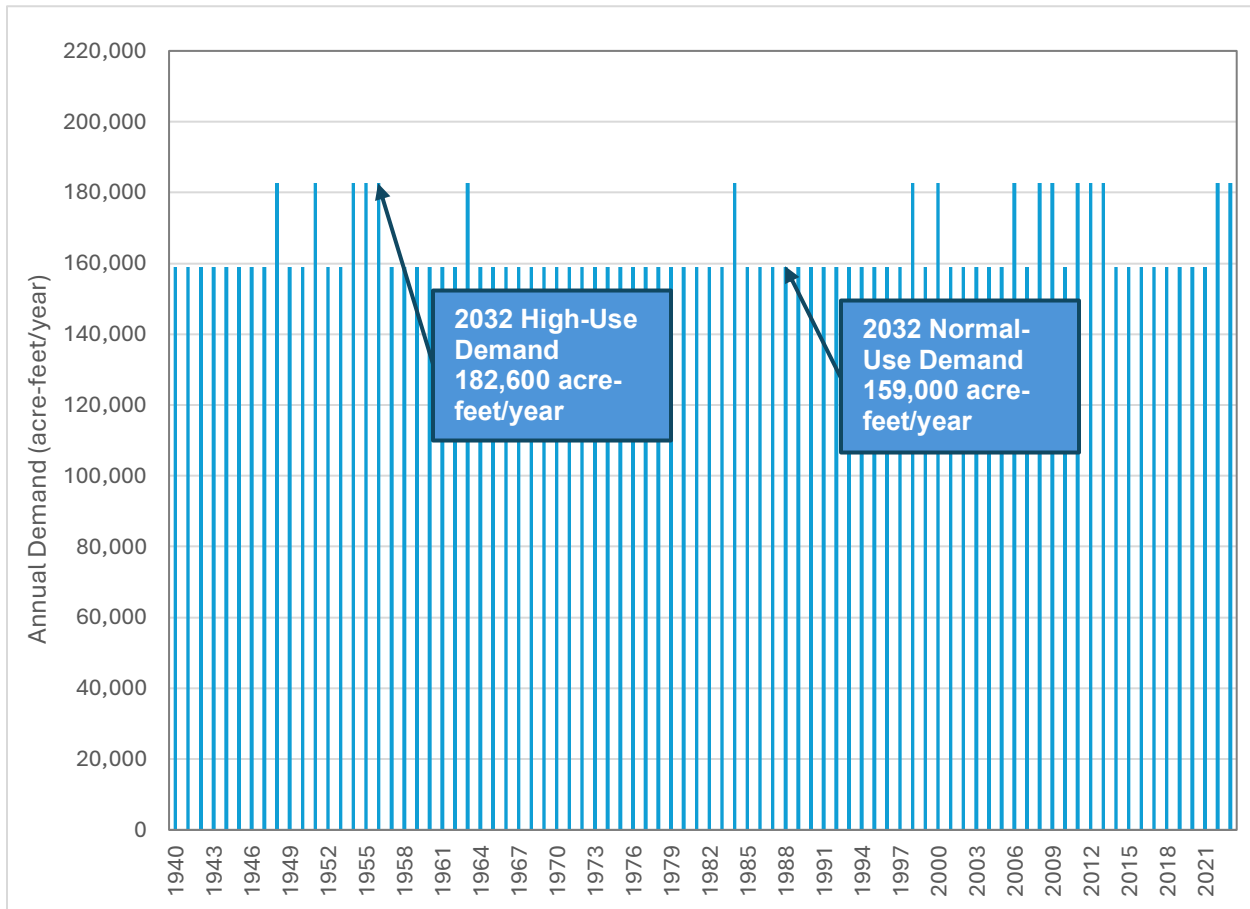
For the 2020 WMP update, a method for selecting between high-water-use demands and normal-water-use demands was developed based on temperature and accumulated precipitation. This method was applied again in the 2032 WMP update with minor changes. Specifically, the method relies on the accumulated precipitation for the months of April to September, and the average daily maximum temperature for those months. To be classified as a high-use year, a threshold for both high temperature and low precipitation must be met, and if both thresholds are met, high-use demands are assigned to that year. All other years are classified as normal-use years and assigned normal-use demands. For this WMP update, the temperature criteria for April to September has been revised from 88.2 degrees, which was the average historic temperature used in the 2020 WMP update, to 91.2 degrees, which is the median temperature for the same months from 2011 to 2023. This time period was selected to better capture temperatures associated with the per capita daily water use data incorporated in this update. The accumulated precipitation criteria from April to September remains at 23.65 inches.

Figures 1 and 2 present the weather-varied projected 2032 City of Austin water demands and other municipal (non-Austin) water demands for the model period 1940-2023. Over this period, 17 years are categorized as high-use years, and 67 years are categorized as normal-use years.

**Figure 1. Weather-Varied Demand for City of Austin**



**Figure 2. Weather-Varied Demand for Other Municipal Customers**



### 3.0 HIGH-USE AND NORMAL-USE FACTORS

As was done in the 2020 WMP, the factor representing the ratio of City of Austin high-use to normal-use year demand was calculated separately from other firm non-steam electric factors. The projected normal-water-use demand for the City of Austin for 2032 was calculated to be 183,200 acre-feet. This is approximately 88.5 percent of the projected high-use demand for 2032 of 207,100 acre-feet. As mentioned in Section 1, an additional fixed demand (not weather-varied) of 2,900 acre-feet per year was included in the modeling and met with reuse for the City of Austin’s municipal demand.

The projected firm other (non-Austin and non-steam electric) normal-water-use demand for 2032 was calculated to be 159,000 acre-feet. These projected demands include wholesale customers of Austin that do not currently hold a contract with LCRA but are anticipated to become LCRA customers by 2032. This is approximately 87.0 percent of the projected high-use demand for 2032 of 182,600 acre-feet. This factor was applied to all non-Austin Muni-other demands.